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Apr 14, 2003

DERWENT-ACC-NO: 1994-137118

DERWENT-WEEK: 200328

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TITLE: Block co:polyether(s) prepn. from poly-tetra:methylene-ether glycol(s) - by oxonium coupling with diol(s), tri:ol(s) or poly:ol(s) in presence of strongly acid solid matrix catalysts

INVENTOR: PRUCKMAYR, G

PATENT-ASSIGNEE:

ASSIGNEE

DU PONT DE NEMOURS &amp; CO E I

CODE

DUPO

PRIORITY-DATA: 1992US-0962272 (October 16, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 3396275 B2	April 14, 2003		004	C08G065/321
DE 4335287 A1	April 21, 1994		004	C08G065/32
FR 2697024 A1	April 22, 1994		008	C08G065/34
JP 06200014 A	July 19, 1994		004	C08G065/32

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP 3396275B2	October 18, 1993	1993JP-0260225	
JP 3396275B2		JP 6200014	Previous Publ.
DE 4335287A1	October 15, 1993	1993DE-4335287	
FR 2697024A1	October 15, 1993	1993FR-0012292	
JP 06200014A	October 18, 1993	1993JP-0260225	

INT-CL (IPC): C08G 18/48; C08G 63/00; C08G 65/30; C08G 65/32; C08G 65/321; C08G 65/34

ABSTRACTED-PUB-NO: DE 4335287A

BASIC-ABSTRACT:

Prodn. of block copolymers (I) comprises (a) heating a poly(tetramethylene ether)-glycol (PTMEG) of Mn 200-3500 (II) for 0.5-5 hrs. at 90-150 deg.C in the presence of a strongly acid solid matrix catalyst (III) and 1-50 wt.% 2-40C polyol contg. 2-6 OH gps. (IV), (b) separating from catalyst (III) and (c) working up to give a prod. (I) with Mn = at least 110% of the mol.wt. of (II).

Stage (a) is pref. carried out at 120-145 deg.C; catalyst (III) is a copolymer of tetrafluoroethylene (TFE) and a monomer of formula  $\text{CF}_2=\text{CF}=(\text{O}-\text{CF}_2-\text{CF}(\text{CF}_3))_n-\text{O}-\text{CF}_2-\text{CF}_2-\text{SO}_2\text{OH}$  (V).

Pref. (III) ism, e.g. Nafion perfluorosulphonic acid resin; this accelerates the



depolymerisation of PTMEG by dehydration to give a tert. oxonium ion which then reacts with (IV), e.g. ethylene glycol, PEG, butanediol, TMP, glycerol etc.

ADVANTAGE - Process provides modified PTMEG with improved low-temp. flexibility and lower m.pt. and viscosity (i.e. better handling properties) then corresp. unmodified PTMEG; this modification also changes the hydrophilic/hydrophobic character, and affects the water vapour permeability of the polymer and of prods. obtd. by incorporating PTMEG into polyurethanes, polyurethane-ureas and polyether-esters etc.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: BLOCK CO POLYETHER PREPARATION POLY TETRA METHYLENE ETHER GLYCOL  
OXONIUM COUPLE DIOL TRI OL POLY OL PRESENCE STRONG ACID SOLID MATRIX CATALYST

DERWENT-CLASS: A14 A25

CPI-CODES: A04-E09; A04-E10C; A05-H05; A10-E01; A12-W11K;

#### ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 017 ; H0022 H0011 ; R00908 G1036 G1025 G0997 D01 D11 D10 D50 D84 F28 F26 ; G1025\*R G0997 D01 F28 F26 G1070\*R F29 G1036\*R G1025 D11 D10 D50 D84 D82 D83 D85 D86 D87 D88 D89 D90 D91 D92 D93 D94 D95 ; H0044\*R H0011 ; L9999 L2528 L2506 ; L9999 L2200 ; L9999 L2755 L2733 ; L9999 L2084 ; P1036 P0964 F34 ; P0975 P0964 F34 ; H0260 Polymer Index [1.2] 017 ; H0022 H0011 ; R00908 G1036 G1025 G0997 D01 D11 D10 D50 D84 F28 F26 ; R00822 G1025 G0997 D01 D11 D10 D50 D82 F28 F26 ; H0044\*R H0011 ; L9999 L2528 L2506 ; L9999 L2200 ; L9999 L2755 L2733 ; L9999 L2084 ; P1036 P0964 F34 ; P0975 P0964 F34 ; H0260 Polymer Index [1.3] 017 ; H0022 H0011 ; R00908 G1036 G1025 G0997 D01 D11 D10 D50 D84 F28 F26 ; R00113 G1070 G0997 D01 D11 D10 D50 D83 F29 F26 ; H0044\*R H0011 ; L9999 L2528 L2506 ; L9999 L2200 ; L9999 L2755 L2733 ; L9999 L2084 ; P1036 P0964 F34 ; P0975 P0964 F34 ; H0260 Polymer Index [1.4] 017 ; H0022 H0011 ; R00908 G1036 G1025 G0997 D01 D11 D10 D50 D84 F28 F26 ; R01075 G1025 G0997 D01 D11 D10 D50 D85 F28 F26 ; H0044\*R H0011 ; L9999 L2528 L2506 ; L9999 L2200 ; L9999 L2755 L2733 ; L9999 L2084 ; P1036 P0964 F34 ; P0975 P0964 F34 ; H0260 Polymer Index [1.5] 017 ; H0022 H0011 ; R00908 G1036 G1025 G0997 D01 D11 D10 D50 D84 F28 F26 ; R00420 G1070 G0997 D01 D11 D10 D50 D86 F29 F26 ; H0044\*R H0011 ; L9999 L2528 L2506 ; L9999 L2200 ; L9999 L2755 L2733 ; L9999 L2084 ; P1036 P0964 F34 ; P0975 P0964 F34 ; H0260 Polymer Index [1.6] 017 ; B9999 B4035 B3930 B3838 B3747 ; K9665 ; B9999 B3178 ; B9999 B5607 B5572 ; B9999 B3554\*R ; B9999 B3623 B3554 ; B9999 B3407 B3383 B3372 ; B9999 B3509 B3485 B3372 ; B9999 B4875 B4853 B4740 Polymer Index [1.7] 017 ; N9999 N6655\*R ; N9999 N6666 N6655 ; ND03 Polymer Index [1.8] 017 ; C999 C102 C000 ; C999 C306 Polymer Index [1.9] 017 ; O\* 6A ; C999 C102 C000 ; C999 C306 Polymer Index [2.1] 017 ; G1025\*R G0997 D01 F28 F26 G1036\*R G1025 D11 D10 D50 D84 G1070\*R F29 D82 D83 D85 D86 D87 D88 D89 D90 D91 D92 D93 D94 D95 ; R00822 G1025 G0997 D01 D11 D10 D50 D82 F28 F26 ; R00908 G1036 G1025 G0997 D01 D11 D10 D50 D84 F28 F26 ; R01075 G1025 G0997 D01 D11 D10 D50 D85 F28 F26 ; R00113 G1070 G0997 D01 D11 D10 D50 D83 F29 F26 ; R00420 G1070 G0997 D01 D11 D10 D50 D86 F29 F26 ; P0953 P0839 P0964 H0260 F34 F41 ; P1058\*R P1592 P0964 H0260 F34 F77 ; P1581 P1570 P1592 H0260 F77 F78 ; H0011\*R Polymer Index [2.2] 017 ; G1025\*R G0997 D01 F28 F26 G1070\*R F29 G1036\*R G1025 D11 D10 D50 D84 D82 D83 D85 D86 D87 D88 D89 D90 D91 D92 D93 D94 D95 ; R00822 G1025 G0997 D01 D11 D10 D50 D82 F28 F26 ; R00113 G1070 G0997 D01 D11 D10 D50 D83 F29 F26 ; R01075 G1025 G0997 D01 D11 D10 D50 D85 F28 F26 ; R00420 G1070 G0997 D01 D11 D10 D50 D86 F29 F26 Polymer Index [3.1] 017 ; G0806 G0022 D01 D51 D53 D11 D10 D12 D59 D60 D69 F34 F\* 7A F62 ; R00975 G0022 D01 D12 D10 D51 D53 D59 D69 D82 F\* 7A ; H0022 H0011 ; S9999 S1503 S1456 Polymer Index [3.2] 017 ; ND01 ; Q9999 Q6917

#### POLYMER-MULTIPUNCH-CODES-AND-KEY-SERIALS:

Key Serials: 0004 0005 0013 0037 0166 0169 0203 0207 0210 0214 0230 0231 0949 0970  
1054 1279 1286 1288 1291 1294 1297 1317 1319 1323 1329 1339 1343 1345 2038 2043 2064  
2097 2120 2122 2148 2149 2152 2153 2178 2205 2379 2383 2542 2556 2560 2628 2667 2670  
2680 3075 3077 3250 3251 3256 3266

Multipunch Codes: 017 028 035 036 038 04& 08& 147 15& 157 169 170 171 173 176 177  
19- 20& 208 240 250 262 27& 293 344 346 351 402 406 437 504 512 52& 53& 532 533 535  
54& 540 551 560 566 58& 604 608 679 689 725 017 038 143 144 147 149 150 157 169 170



171 173 176 177 208 240 53& 54& 017 034 04- 05- 062 064 075 087 090 116 27& 393 479  
546 56& 642 720

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1994-063390